



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
HEADQUARTERS III CORPS AND FORT HOOD
FORT HOOD, TEXAS 76544-5056

AFZF-CG

13 May 02

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Phantom Six Sends -- Mortar Operations and Misfire Procedures for M121, 120mm Mortars

1. Training for combat has inherent risks and this fact was tragically demonstrated during recent training at the National Training Center (NTC). The crew of an M1064A3 mortar carrier experienced a misfire. During the process of extracting the round, an in-bore detonation occurred resulting in the death of three III Corps soldiers. Investigation results revealed that a likely contributing factor to this incident was that critical steps of the misfire procedures were not followed or enforced. Other emerging contributing factors were crew inexperience, lack of proper supervision, and failure to reassess the risk when crewmembers were changed out. Commanders, I need your immediate action to prevent an incident of this nature from occurring in the future.

2. It is very apparent to me that M121, 120mm mortar misfire procedures must be performed to standard and in sequence. If steps are bypassed or performed out of sequence, or performed by inexperienced and / or unsupervised soldiers, a tragic accident can result. For this reason, our mortar crews have to be unfailingly proficient with some peculiar and unique operating techniques involving this weapon, particularly the safety switch.

a. The peculiarity is that unlike many other weapon safety switches in the Army, this system's safety switch has a selector lever that is moved away from the desired function (F for Fire and S for Safe). This results in the selector lever covering the letter of the function (F or S) that is not desired, exposing the letter of the function that is desired. This uniqueness may make crewmembers assume that as long the S is showing, that the weapon is on safe. Hence the mortar training phrase "what you see is what you get." However, unless the lever is in the fully locked safe position (The letter F is covered with the selector lever.), the weapon must be considered armed. The reason for this is that unless the lever is in the fully locked safe position, the firing pin can still be exposed above the cannon base. Therefore, what you see is potentially not what you get!

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b. With the mechanical issues of the safety switch, a lack of adequate training, and recently identified procedural discrepancies found between the technical manual (TM) and field manual (FM) on this subject, this situation could be an accident waiting to happen. For this reason, it is paramount that you ensure your mortar crews are familiar with and have the Army Safety Center Safety Alert (Encl 1) and Safety of Use Message (SOUM) 02-004, DTG 081418Z APR 02 (Encl 2) on board their carrier at all times. They provide updated information and guidance regarding M121 mortar misfire procedures. The only misfire procedures authorized for use in III Corps are those identified in these two noted messages. Additionally and at enclosure 3 is an easy to read and follow 120mm Mortar Misfire Checklist. This checklist must also be on board the mortar carrier at all times. I want direct command and leadership involvement on this issue.

3. We cannot go another day without arming our mortar crews with the procedures and tools they need to perform their important missions safely. The requirements below are designed to implement lessons learned and bridge the procedural gaps in the TM and FM that were identified during the accident investigations. This memorandum, with all three enclosures, contains the minimum standards for 120mm mortar operations and must be carried on board all mortar carriers during local training, at CTCs, or in deployment or combat environments.

a. Effective immediately, commanders will integrate testing and certification of misfire procedures into the Mortar Gunners' Exam. This is non-negotiable. The exam, including misfire procedures and using the 120mm mortar inert training round, will be administered prior to conducting any 120mm mortar live fire training. This includes Reserve Component commanders of units that train on any III Corps installation and/or are hosted by a III Corps unit anywhere. Commanders must ensure that the exam uses the procedures as outlined in Training Manual 9-1015-250-10, with appropriate changes (changes 1 and 2, as of April 2002), Safety of Use Message 02-004, DTG 081418Z APR 02 (Encl 2) and the 120mm Mortar Misfire Checklist (Encl 3). Crews should be standardized and certified through the Gunners' Exam process. When critical crewmembers change, the newly-formed crew must be trained and the gunner tested to retain certification. Additionally, when mortar crewmembers change before or during live fire, commanders and leaders must reassess the existing risk and have it approved at the appropriate level per unit standing operating procedures.

b. In order to fully develop the skills required to extract a round, soldiers will conduct misfire procedures training using the 120mm mortar inert training round, NSN 6920-01-383-2939. This, too, is non-negotiable. Additionally, the training round must be carried on board at all times - during all live fire training -- home station, CTC, or otherwise.

c. Commanders/leaders must ensure that mortar crews have the correct/latest configuration of the cartridge extractor assembly catch on board, as discussed in the

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SOUM at enclosure 2. The latest configuration has 1/8-inch holes in the face of the extractor catch; allowing crewmembers to visually verify that the cartridge/round is positively attached to the extractor tool. Additionally, before using the extractor tool for training or actual misfire actions, the assistant gunner must inspect and test the extractor tool in accordance with the SOUM.

d. Simulation or merely talking through the sequence of misfire/extraction procedures is not sufficient to certify an individual during the gunners exam. Hands-on training is the standard here. Leaders will ensure that crews are proficient and follow the exact sequence for misfire procedures per TM, Safety Alert (Encl 1), SOUM (Encl 2), and the 120mm Mortar Misfire Checklist (Encl 3). White flashlights will be used for misfire procedures during periods of darkness and limited visibility. Of special importance is the fact that crewmembers use white flashlights during misfire procedures to confirm the correct position of the safety switch selector lever, verify the position of the barrel, and then to examine the cartridge/round - even if this interferes with night vision.

e. Deviation from the required steps is not an option. Prior to conducting mortar live fire, a copy of the appropriate misfire procedure checklist will be located at each gun. Again, an authorized checklist for misfire procedures for the 120mm mortar system is at Encl 3.

f. Only trained and certified (paragraph 3a, above) crewmembers will participate in life fire, i.e., no "guest firers."

4. I expect leaders at every level to mitigate the factors that contribute to the unsafe employment of the 120mm mortar. All leaders must enforce standards. Soldiers must not be allowed to take short cuts or deviate from approved procedural steps in operating the mortar or in executing misfire procedures.



B. B. BELL
Lieutenant General, USA
Commanding

3 Encls a/s

DISTRIBUTION:
IAW FH Form 1853, A

SAFETY ALERT

Recently the Army experienced a tragic accident involving the M121, 120mm mortar system. While conducting live-fire gunnery the crew of the M1064A3 mortar carrier experienced a misfire, and during the process of extracting the round, an in-bore detonation occurred. Three soldiers died and one soldier received minor injuries. While there are numerous factors involved in this accident, the following information requires immediate attention.

The misfire procedures for the 120mm mortar system differ between TM 9-1015-250-10 and FM 23-90 (Mortar). Crews must use the procedures as outlined in Safety of Use Message (SOUM) TACOM Control number, SOUM-02-004. The initial safety investigation revealed that critical steps of the misfire procedures were not followed or enforced to include: ensuring the weapon is fully locked in the SAFE position, and giving special attention to ensuring the Blast Attenuator Device (BAD) is removed and the artillery cleaning staff used for extracting the rod is fully extended and locked. Leaders must ensure that crews follow the exact sequence of these procedures; any deviation from the required steps can result in loss of life.

The safety mechanism on the M121, and M120, 120mm mortar is unlike other safety switches in the Army. With the safety switches on these weapons, the selector lever is moved **away** from the desired function (letter **F** for Fire, or letter **S** for safe). Because of this, the switch will reveal **S** if the weapon is on Safe, or **F** if set to Fire, and will fully cover up the function **not** desired. During the investigation, it was also revealed that the firing pin can still be exposed above the cannon base if the switch is in any other position except the fully locked Safe position. Because of this, the weapon must be considered armed even when the switch is not fully locked in the fire position. Crews **must** ensure the switch is **FULLY** locked into either the Fire or Safe position depending on the mode of operations.

Additional factors revealed that crew drills using the 120mm mortar inert training round, (nomenclature "Battalion Training Aid", NSN 6920-01-383-2939, found in appendix C of TM 9-10150250-10, additional authorization list) is required for misfire procedures training. Soldiers must conduct this training using the inert round in order for them to fully master the task of extracting a round. Simulation or talking through the sequence of misfire procedures is not adequate.

Leaders must ensure crewmembers are cross-trained and can demonstrate through practical exercise each step required during the misfire procedure. Then, leaders at all levels must enforce those standards and not allow either short cuts or deviation from procedural sequencing.

JAMES E. SIMMONS
Brigadier General, USA
Director of Army Safety



U.S. ARMY SAFETY CENTER

Encl 1

Encl 2

Urgent 120 MM Mortar Safety of Use MessageFrom: Donald, James E. MG - Deputy Chief
of Staff, G1
Sent: Friday, April 26, 2002 9:25 AM
Subject: Urgent 120 MM Mortar Safety of Use Message

Importance: High

111500Z APR 02 USE THIS DTG TO REFERENCE THIS MESSAGE
FROM CDR OSC ROCK ISL IL //AMSOS-PBS//
740 (A)

SUBJECT: AMMUNITION INFORMATION NOTICE (AIN) 26-02, RETRANSMISSION OF TACOM
SAFETY OF USE (SOU) MESSAGE, SOUM-02-004, OPERATIONAL, MORTAR, 120MM

1. AIN 25-02 WAS TRANSMITTED ON 101940Z APR 02.

2. TEXT OF SUBJECT SOUM FOLLOWS:

"UNCLAS

081418Z APR 02

SUBJECT: SAFETY OF USE MESSAGE (SOU) TACOM CONTROL NO. SOUM-02-004,
OPERATIONAL, MORTAR, 120MM: TOWED M120, NSN 1015-01-226-1672, LIN M68405 AND
MORTAR, 120MM: CARRIER-MOUNTED M121, NSN 1015-01-292-3801, LIN M68405.

* URGENT *

* DEATH OR SERIOUS INJURY TO SOLDIERS OR *

* DAMAGE TO ARMY EQUIPMENT WILL OCCUR IF THE *

* INSTRUCTIONS IN THIS MESSAGE ARE NOT IMPLEMENTED *

1. REFERENCES: TM 9-1015-250-10, OPERATOR'S MANUAL FOR MORTAR, 120MM: TOWED
M120, NSN 1015-01-226-1672, AND MORTAR, 120MM:
CARRIER-MOUNTED M121, NSN 1015-01-292-3801, AUGUST 1996, WITH CHANGE 1, 1
MARCH 1999, AND CHANGE 2, 1 JUNE 2001.

2. DISTRIBUTION: NOTE THIS IS A "SAFETY OF USE MESSAGE". MACOM COMMANDERS
WILL IMMEDIATELY RETRANSMIT THIS MESSAGE TO ALL SUBORDINATE
COMMANDS/ACTIVITIES WITHIN 24 HOURS OF RECEIPT OF THIS MESSAGE AND
ACKNOWLEDGE RECEIPT OF THIS MESSAGE WITHIN FIVE WORKING DAYS TO SAFETY
OFFICE, TANK-AUTOMOTIVE AND ARMAMENT COMMAND-ROCK ISLAND (TACOM-RI),
ATTN:AMSTA-LC-SF, ROCK ISLAND, IL 61299-7630, E-MAIL:
AMSTA-LC-SF@RIA.ARMY.MIL.

3. PROBLEM DISCUSSION:

A. SUMMARY OF PROBLEM. A MALFUNCTION/INCIDENT OCCURRED AT FT. BENNING ON 24
JAN 2002 DURING REMOVAL OF A MISFIRED 120MM CARTRIDGE FROM THE 120MM MORTAR.
THIS INCIDENT RESULTED IN SERIOUS INJURIES (INCLUDING LOSS OF A HAND) TO THE
TWO SOLDIERS PERFORMING THE MISFIRE PROCEDURE. A SECOND MALFUNCTION/INCIDENT
OCCURRED AT FORT IRWIN, CA ON 29 MARCH 2002. THIS INCIDENT RESULTED IN THE
DEATHS OF THREE SOLDIERS AND INJURY TO A FOURTH. ACCIDENT INVESTIGATIONS ARE
IN PROGRESS TO DETERMINE THE CAUSE OF THE INCIDENTS AND RECOMMENDATIONS FOR
CORRECTIVE ACTIONS IF NECESSARY. UNTIL THESE INVESTIGATIONS ARE COMPLETE, WE
ADVISE ALL UNITS THAT USE 120MM MORTAR AMMUNITION, OF THE POTENTIAL FOR
INJURY IF MISFIRE PROCEDURES ARE NOT PROPERLY PERFORMED. ALL UNITS MUST
STRICTLY FOLLOW THE MISFIRE PROCEDURES IN CHAPTER 2, REFERENCED OPERATOR'S
MANUAL, AND THE ADDITIONAL PROCEDURES DESCRIBED IN PARAGRAPH 4A OF THIS
SOU.

B. PARTS, ASSEMBLY, OR COMPONENTS TO BE INSPECTED. EXTRACTOR, CARTRIDGE, NSN
1015-01-433-4471. EACH MORTAR HAS A CARTRIDGE EXTRACTOR ASSEMBLY AS PART OF
BASIC ISSUE ITEMS (BII). ADDITIONALLY, THE USER SHALL INSPECT ALL OTHER
CARTRIDGE EXTRACTOR ASSEMBLIES ON-HAND.

4. USER ACTIONS:

A. MISFIRE PROCEDURES: THIS IS AN UNTIMED EVENT. SAFE OPERATION OF THE 120MM
MORTAR IS DEPENDENT ON ACCURATELY FOLLOWING ALL INSTRUCTIONS IN TM
9-1015-250-10. THE SQUAD LEADER IS PRESENT WITH TM 9-1015-250-10,
APPROPRIATE CHANGES, AND THIS SOU (SOU-02-004) DURING THE ENTIRE MISFIRE
PROCEDURE. THE SQUAD LEADER SUPERVISES THE ENTIRE MISFIRE PROCEDURE.
IMMEDIATELY CHANGE/ADD MISFIRE PROCEDURES OF CHAPTER 2, REFERENCED

Page 1

Encl 2

OPERATOR'S MANUAL, AS FOLLOWS:

(1) CHANGE PARAGRAPH 5, PAGE 2-115 TO READ: "WHEN THE MORTAR IS COOL, GUNNER PLACES THE SAFETY MECHANISM (2) ON SAFE (S SHOWING) AND SHOUTS 'THE SAFETY MECHANISM IS IN THE SAFE POSITION.'"

(2) ADD PARAGRAPH 6 (A) TO PARAGRAPH 6, PAGE 2-116 TO READ: "THE ASSISTANT GUNNER PHYSICALLY CONFIRMS THAT THE SAFETY MECHANISM IS ON SAFE (S SHOWING). SQUAD LEADER CONFIRMS ACTIONS OF THE GUNNER AND ASSISTANT GUNNER AND VERIFIES THAT THE SELECTION SWITCH IS IN THE SAFE POSITION."

(3) ADD PARAGRAPH 6 (B) TO PARAGRAPH 6, PAGE 2-116 TO READ: "IF THE ASSISTANT GUNNER AGREES THAT THE SAFETY MECHANISM IS IN THE SAFE POSITION THEN HE SHOUTS 'THE SAFETY MECHANISM IS IN THE SAFE POSITION' SQUAD LEADER CONFIRMS ACTIONS OF THE GUNNER AND ASSISTANT GUNNER AND MISFIRE PROCEDURES CONTINUE."

(4) CHANGE PARAGRAPH 7, PAGE 2-116 TO READ: "GUNNER REMOVES AND STOWS SIGHT UNIT AND SIGHT EXTENSION. ASSISTANT GUNNER REMOVES AND STOWS BLAST ATTENUATOR DEVICE (BAD) (M121 ONLY). SQUAD LEADER CONFIRMS ACTION OF THE GUNNER AND ASSISTANT GUNNER."

(5) CHANGE PARAGRAPH 8, PAGE 2-117 TO READ: "INSPECT THE CARTRIDGE EXTRACTOR ASSEMBLY CATCHES TO MAKE SURE THEY ARE THE LATEST CONFIGURATION. THERE SHOULD BE A 1/8 INCH HOLE IN THE FACE OF THE CATCH. THE HOLE INDICATES THAT THE CATCH IS THE LATEST CONFIGURATION. ASSISTANT GUNNER INSPECTS CARTRIDGE EXTRACTOR AND MAKES SURE THAT THE CARTRIDGE EXTRACTOR CATCHES ARE FREE OF BURRS, WEAR, OR RUST/CORROSION THAT WOULD IMPAIR FUNCTION. ASSISTANT GUNNER WILL TEST EACH CARTRIDGE EXTRACTOR CATCH TO ENSURE FREE OPERATION AND THAT EACH WILL SNAP POSITIVELY INTO ORIGINAL POSITION. IF THE CARTRIDGE EXTRACTOR FAILS TO MEET INSPECTION STANDARDS THEN THE CARTRIDGE EXTRACTOR IS NON MISSION CAPABLE. DO NOT USE THE CARTRIDGE EXTRACTOR. PROCEED TO PARAGRAPH 13, PAGE 2-121 AND FOLLOW THE BARREL TIP METHOD TO REMOVE THE MISFIRED CARTRIDGE. SQUAD LEADER CONFIRMS ACTIONS OF THE ASSISTANT GUNNER."

(6) ADD PARAGRAPH 8 (A) TO READ: "ASSISTANT GUNNER ATTACHES CARTRIDGE EXTRACTOR (3) SECURELY TO EXTENDED ARTILLERY CLEANING STAFF ASSEMBLY (4). SQUAD LEADER CONFIRMS ACTIONS OF THE ASSISTANT GUNNER."

(7) ADD TO THE END OF PARAGRAPH 9, PAGE 2-117: "IF THE SECTION SLEEVES CAN NOT BE TIGHTLY LOCKED THEN THE CARTRIDGE EXTRACTOR ASSEMBLY IS NON MISSION CAPABLE. DO NOT USE THE CARTRIDGE EXTRACTOR ASSEMBLY. PROCEED TO PARAGRAPH 13, PAGE 2-121 AND FOLLOW THE BARREL TIP METHOD TO REMOVE THE MISFIRED CARTRIDGE. SQUAD LEADER CONFIRMS ACTIONS OF THE GUNNER AND ASSISTANT GUNNER."

B. PREVENTATIVE MAINTENANCE CHECKS AND SERVICES (PMCS): IMMEDIATELY ADD THE FOLLOWING TO TABLE 2-1, PAGE 2-36, REFERENCED OPERATOR'S MANUAL, AS A "BEFORE" REQUIREMENT. THE BELOW PMCS SHALL BE COMPLETED PRIOR TO EVERY USE OF THE MORTAR.

(1) LOCATION/ITEM: BASIC ISSUE ITEMS/CARTRIDGE EXTRACTOR

(2) PROCEDURE: INSPECT THE CARTRIDGE EXTRACTOR CATCHES TO MAKE SURE THEY ARE THE LATEST CONFIGURATION. THERE SHOULD BE A 1/8 INCH HOLE IN THE FACE OF THE CATCH. THE HOLE MEANS IT IS THE LATEST CONFIGURATION.

(3) NOT FULLY MISSION CAPABLE IF: ANY OR ALL OF THE FOUR CATCHES DO NOT HAVE THIS HOLE THE CARTRIDGE EXTRACTOR IS AN OLDER CONFIGURATION AND SHOULD NOT BE USED. IMMEDIATELY TURN-IN ANY NON-CONFORMING CARTRIDGE EXTRACTORS FOR REPAIR OR REPLACEMENT.

(4) PROCEDURE: INSPECT THE CARTRIDGE EXTRACTOR CATCHES FOR BURRS, WEAR OR HEAVY RUST/CORROSION THAT WOULD IMPAIR FUNCTION. TEST THE SPRING RELEASE ON EACH OF THE FOUR CARTRIDGE EXTRACTOR CATCHES. EACH CARTRIDGE EXTRACTOR CATCH MUST SNAP POSITIVELY INTO ORIGINAL POSITION AFTER BEING RETRACTED AND RELEASED.

(5) NOT FULLY MISSION CAPABLE IF: CARTRIDGE EXTRACTOR CATCHES HAVE BURRS, WEAR, HEAVY RUST/CORROSION WHICH IMPAIRS FUNCTION, OR IF CATCHES CANNOT BE RETRACTED, OR IF CARTRIDGE EXTRACTORS DO NOT SNAP POSITIVELY INTO ORIGINAL POSITION AFTER RELEASE. IMMEDIATELY TURN-IN ANY NON-CONFORMING CARTRIDGE EXTRACTORS FOR REPAIR OR REPLACEMENT.

(6) PROCEDURE: ATTACH CARTRIDGE EXTRACTOR TO STAFF ASSEMBLY (NSN 1015-01-292-0966).

(7) NOT FULLY MISSION CAPABLE IF: THE CARTRIDGE EXTRACTOR DOES NOT ATTACH

Enc1 2

FIRMLY AND COMPLETELY TO THE STAFF ASSEMBLY. IMMEDIATELY TURN-IN ANY NON-CONFORMING CARTRIDGE EXTRACTOR ASSEMBLIES FOR REPAIR OR REPLACEMENT.

C. CARTRIDGE EXTRACTOR ASSEMBLY MAINTENANCE INSTRUCTIONS: IMMEDIATELY ADD THE FOLLOWING NEW PARAGRAPH TO PAGE 3-3 OF REFERENCED OPERATOR'S MANUAL: "7. THE CARTRIDGE EXTRACTOR ASSEMBLY MUST BE SENT TO ORGANIZATIONAL MAINTENANCE FOR COMPLETE INSPECTION AND SERVICE SEMIANNUALLY."

D. ALL USERS WILL CONDUCT A SAFETY CLASS PRIOR TO THE NEXT USE OF THE 120MM MORTAR COVERING MISFIRE PROCEDURES AND THIS SOUM.

E. ALL USERS WILL IMMEDIATELY CONDUCT THE PMCS PROCEDURES FOR THE CARTRIDGE EXTRACTOR ASSEMBLY IDENTIFIED IN PARAGRAPH 4 B OF THIS SOUM.

5. RECOMMENDED USER ACTIONS:

A. RECOMMEND THAT ALL INSTALLATIONS ADD TO THEIR MORTAR RANGE SAFETY SOP A REQUIREMENT THAT AT LEAST ONE FULLY FUNCTIONAL CARTRIDGE EXTRACTOR ASSEMBLY IS ON HAND AT EACH FIRING POINT PRIOR TO ALL LIVE FIRE EXERCISES.

B. RECOMMEND THAT EACH MORTAR CREW PERFORM A DAILY MISFIRE REHEARSAL USING THE DUMMY ROUND AND CARTRIDGE EXTRACTOR ASSEMBLY PRIOR TO FIRING LIVE AMMUNITION.

6. PROGRAM SPONSOR ACTIONS: PUBLICATIONS THAT REQUIRE CHANGE AS A RESULT OF THIS INSPECTION. TACOM-RI WILL ISSUE A CHANGE TO THE OPERATOR'S MANUAL TM 9-1015-250-10. THIS CHANGE WILL ADD BEFORE FIRING PREVENTATIVE MAINTENANCE CHECKS AND SERVICES (PMCS) FOR THE CARTRIDGE EXTRACTOR ASSEMBLY, AND WILL MODIFY MISFIRE PROCEDURES.

7. POINT OF CONTACTS.

A. MESSAGE POINT OF CONTACT. MR. JOE SCHMIDT, AMSTA-LC-CFSM, DSN 793-3369, E-MAIL: SCHMIDTJ2@RIA.ARMY.MIL, OR MR. JIM HAYES, AMSTA-LC-CFSM, DSN 793-3229, E-MAIL: HAYESJ@RIA.ARMY.MIL.

B. SAFETY ENGINEERING. MRS. JUDITH WINDHAM, AMSTA-LC-SF, DSN 793-6367, E-MAIL WINDHAMJ2@RIA.ARMY.MIL OR MR. GAVIN ZIEGLER, AMSTA-LC-SF, DSN 793-2995, E-MAIL ZIEGLERG@RIA.ARMY.MIL.

8. DIRECTIONS FOR OBTAINING LAR INFORMATION: AFTER REVIEW OF THIS MESSAGE, CONTACT YOUR LOCAL TACOM LAR FOR ASSISTANCE IN ANSWERING QUESTIONS YOU MAY HAVE. IF YOU DO NOT KNOW WHO YOUR TACOM LAR IS YOU CAN LOG ONTO THE ARMY ELECTRONIC PRODUCT SUPPORT (AEPS) WEBSITE AT [HTTP://AEPS.RIA.ARMY.MIL](http://AEPS.RIA.ARMY.MIL) <<http://aeps.ria.army.mil/>>. YOU WILL NEED A PASSWORD TO ENTER AEPS. THE AEPS WEBSITE PROVIDES THE NECESSARY FORMS AND DIRECTIONS TO GET YOU A LOGIN ID AND PASSWORD. ONCE LOGGED ONTO THE AEPS SITE, SELECT THE LAR LOCATOR SERVICE; SELECT THE APPROPRIATE REGION (CONUS, USAREUR, FAR EAST, KUWAIT) AND CLICK ON A NAME; THIS WILL GIVE YOU THE LAR'S NAME, DSN AND COMMERCIAL PHONE NUMBER, E-MAIL ADDRESS AND PHOTO. IF YOU DON'T HAVE ACCESS TO THE AEPS YOU CAN OBTAIN INFORMATION ON THE IDENTITY OF YOUR LAR BY CONTACTING THE TACOM SENIOR COMMAND REPRESENTATIVE (SCR) FOR YOUR AREA.

CONUS: (INCLUDES NATIONAL GUARD, CONUS ARMY RESERVE UNITS, SOUTHCOM AND KUWAIT) DSN 367-6204/6293, COMM 404-464-6204/6293; USAREUR (GREAT BRITAIN, GERMANY, BELGIUM, LUXEMBURG, ITALY, BOSNIA, KOSOVO AND MACEDONIA) DSN 375-6128/7436, COMM 011 49 621-487-3461/6218, FAR EAST (INCLUDES ALASKA, HAWAII, KOREA, OKINAWA, KWAJALEIN AND JAPAN) DSN 315-722-3036/6579, COMM 011 82 32 520-3036/6579."

3. POINT OF CONTACT FOR THIS AIN IS MR. DAVID LAKEMAN, LAKEMAND@OSC.ARMY.MIL, DSN 793-3151, 309-782-3151.

4. THIS AIN EXPIRES 30 APR 03 UNLESS OTHERWISE SUPERSEDED OR RESCINDED.

5. WEBSITE AND ASIS UPDATE WILL ACCOMPANY A SUBSEQUENT AIN.

//SIGNED//

B.P.HENNEBERRY, MINIMIZED CONSIDERED

AMSOS-PBS

120mm Mortar Misfire Checklist

As of May 2002

Name	UNIT	Test Date:
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Misfire Procedures (Untimed Event)	Yes/No/N/A
<p>NOTE</p> <ul style="list-style-type: none"> • A misfire is a failure of the cartridge to fire after cartridge is dropped into mortar barrel assembly. Misfires may be caused by defective ammunition, a cartridge dropped with the safety mechanism on SAFE, a damaged firing pin, or an obstruction in bore that prevents cartridge from sliding down and striking firing pin. 	
<p>User actions:</p> <p>a. Misfire procedures: this is an untimed event. Safe operation of the 120mm mortar is dependent on accurately following all instructions in TM 9-1015-250-10 (AUG 1996). The squad leader is present with TM 9-1015-250-10, appropriate changes, and SOUM 02-004 during the entire misfire procedure.</p> <p>**The squad leader supervises the entire misfire procedure.</p>	
<ol style="list-style-type: none"> 1. When a misfire occurs any crewmember shouts, "MISFIRE". <p>WARNING: To avoid injury, all crewmembers must exit from front of carrier only.</p> <ol style="list-style-type: none"> 2. All crewmembers, except the gunner, move at least 100 meters behind the mortar. <p>WARNING: Ensure cross-leveling loop clamp is as tight as physically possible.</p> <ol style="list-style-type: none"> 3. The gunner stands to the left or right rear of the mortar and strikes barrel (1) several blows with the heel of his boot. If the cartridge does not fire after kicking the barrel, the gunner moves to where the rest of the crew is and waits one minute. <p>WARNING: If kicking the barrel does not cause the cartridge to fire during a misfire and the mortar is hot, avoid serious burns by waiting until the mortar is cool enough to touch with bare hands. Water or snow applied to the outside of the barrel can be used for cooling.</p> <ol style="list-style-type: none"> 4. After one minute, the gunner returns to the mortar and checks to see if mortar is cool 5. When the mortar is cool, gunner places the safety mechanism (2) on safe (S showing with F covered up) and shouts "The safety mechanism is in the safe position". White light will be used to verify safety switch selector lever. <p>WARNING:</p>	

120mm Mortar Misfire Checklist

As of May 2002

Misfire Procedures (Untimed Event)	Yes/No/N/A
<ul style="list-style-type: none"> - Keep head and body away from the front of the mortar when removing a misfire - Do not stand directly behind mortar when removing a misfire. - Do not open buffer housing assembly when removing a misfire. <p>6. The gunner calls the rest of the crew forward.</p> <p>6.1 The assistant gunner physically confirms that the safety mechanism is locked into safe (S showing with F covered up). Squad leader confirms actions of the gunner and assistant gunner and verifies that the selection switch is in the safe position. White light will be used to verify safety switch selector lever is locked in Safe.</p> <p>6.2. If the assistant gunner agrees that the safety mechanism is in the safe position then he shouts 'THE SAFETY MECHANISM IS IN THE SAFE POSITION' squad leader confirms actions of the gunner and assistant gunner and misfire procedures continue.</p> <p>7. Gunner removes and stows sight unit and sight extension. Assistant gunner removes and stows Blast Attenuator Device (BAD) (M121 only). Squad leader confirms action of the gunner and assistant gunner.</p> <p>8. Inspect the cartridge extractor assembly catches to make sure they are the latest configuration. There should be a 1/8-inch hole in the face of the catch. The hole indicates that the catch is the latest configuration. Assistant gunner inspects cartridge extractor and makes sure that the cartridge extractor catches are free of burrs, wear, or rust/corrosion that would impair function. Assistant gunner will test each cartridge extractor catch to ensure free operation and that each will snap positively into original position. If the cartridge extractor fails to meet inspection standards then the cartridge extractor is non-mission capable. Do not use the cartridge extractor.</p> <p>8.1. Assistant gunner attaches cartridge extractor (3) securely to extended artillery cleaning staff assembly (4). Squad leader confirms actions of the assistant gunner.</p> <p>WARNING: To avoid injury to crew, if in high range, do not lower to low range. If in low range, do not raise to high range. To avoid serious injury, do not stand in front of or behind barrel. When removing cartridge, do not touch primer and do not stand directly in front of barrel.</p> <p>9. Assistant gunner makes sure artillery cleaning staff assembly section sleeves (5) are all tightly locked, so that staff assembly will not extend or retract. If the section sleeves cannot be tightly locked then the cartridge extractor assembly is non-mission capable. Do not use the cartridge extractor assembly. Obtain serviceable mission capable cartridge extractor. If a serviceable mission capable cartridge extractor cannot be obtained, proceed to paragraph 13 and follow the barrel tip method to remove the misfired cartridge. Squad leader confirms actions of the gunner and assistant gunner.</p>	

120mm Mortar Misfire Checklist

As of May 2002

Misfire Procedures (Untimed Event)	Yes/No/N/A
<p>10. Before assistant gunner inserts cartridge extractor (3), gunner lowers cannon to its lowest elevation, leaving 0.25 in. (0.64 cm) of inner elevating sleeve showing.</p> <p>11. Insert cartridge extractor (3) into the barrel until it rests on the cartridge (6) and will not descend any further.</p> <p>11.1. Slowly rotate cartridge extractor (3) until it grasps cartridge (6). You have grasped the cartridge when you feel the spring-loaded extractor catches (7) click into the holes (8) on the cartridge body.</p> <p>11.2. Continue rotating cartridge extractor (3) ¼ turn. The resistance of the extractor should be much heavier because of latching onto the cartridge (6).</p> <p>11.3. If extra resistance is not felt, cartridge extractor (3) has not successfully connected to the cartridge (6). Repeat steps 11.1 and 11.2. If resistance is still not felt, refer to step 13.</p> <p>12 If the cartridge (6) is grasped, proceed to step 18. If the cartridge cannot be grasped, remove cartridge extractor (3) from barrel. Refer to steps 13 through 16 for additional removal procedures. If cartridge is grasped but cannot be removed, refer to steps 13, 14, and 17.</p> <p>13 The gunner holds barrel (1) near muzzle and assistant gunner holds bipod assembly (9). The ammo bearer opens buffer housing assembly (10).</p> <p>14 The gunner and ammo bearer turn barrel (1) until the white line is in down position and carefully remove barrel from breech cap socket (11). White light will be used to verify the position of the barrel.</p> <p>15 Keeping barrel horizontal and pointing in the direction of fire, the gunner and the ammo bearer carry outside carrier (M121 only). The assistant gunner will then place the meaty portions of his thumbs over the edges of the muzzle, grasping the barrel with his fingers.</p> <p>16 At the gunner's command, the ammo bearer will lift the cannon's breech cap assembly causing the cartridge to slide down to the assistant gunner's hands. The assistant gunner will then remove the cartridge, inspect it, attempt to replace the safety wire (if applicable), place the cartridge in the dud pit, tag the cartridge, and notify Explosive Ordinance Disposal (EOD). Refer to step 24.</p> <p>17 Keeping barrel horizontal and pointing in the direction of fire, the gunner and ammo bearer lift barrel (with cartridge extractor still attached to cartridge) carefully over the ramp crossmember (12) (M121 only), handing it off to the assistant gunner and squad leader. They will then carry the cannon to the dud pit and notify Explosive Ordinance Disposal (EOD).</p> <p>WARNING: When removing the cartridge, do not touch the primer and do not stand directly in front of barrel.</p> <p>18 Relax grip on the artillery cleaning staff assembly (4) momentarily. Then, without rotating, slowly pull the staff assembly slightly to ensure cartridge (6)</p>	

120mm Mortar Misfire Checklist **As of May 2002**

Misfire Procedures (Untimed Event)	Yes/No/N/A
<p>is grasped. If the cartridge is connected, continue to remove cartridge.</p> <p>19 With the gunner's hands held ready at the muzzle, the assistant gunner withdraws the cartridge (6) straight out of the barrel (1) with the cartridge extractor (3).</p> <p>20 The gunner grasps the cartridge (6) as it comes out of the barrel (1).</p> <p>21 The ammo bearer will assist in releasing the cartridge (6) from the cartridge extractor (3). (Do not place the cartridge on the ground when removing the cartridge extractor.) Gunner holds the cartridge horizontally while the ammo bearer releases the extractor by depressing the four extractor catches (7) simultaneously.</p> <p>22 The gunner inspects the cartridge (6). If the safety mechanism (2) was in the FIRE mode when the misfire occurred and the primer was not dented, inspect the firing pin, firing pin bushing, and safety mechanism (see Breech Assembly Repair in chapter 3). White light will be used to perform this operation.</p> <p>23 The gunner gives the cartridge (6) to the ammo bearer. The ammo bearer attempts to replace the safety wire (if applicable), places the cartridge in the dud pit, tags the cartridge, and notifies EOD.</p> <p>24 Swab the barrel (1).</p> <p>25 Re-lay the mortar.</p>	